

WHAT IS CLAIMED IS:

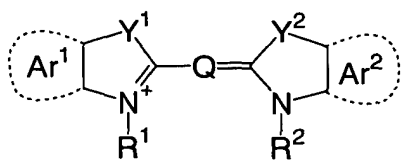
1. An image forming material comprising a support and an image forming layer which is laminated on the support and contains at least (A) a water-insoluble and alkali-soluble high-molecular compound and (B) a compound having a structure represented by the following general formula (1) and having an absorption maximum at a wavelength in a range of 760 nm to 1,200 nm:

General formula (1):  $X^-M^+$

wherein in the general formula (1),  $X^-$  represents an anion containing at least one substituent having an alkali-dissociating proton; and  $M^+$  represents a counter cation which is an atomic group having an absorption maximum at a wavelength in a range of 760 nm to 1,200 nm.

2. The image forming material according to claim 1, wherein in the general formula (1), the counter cation represented by  $M^+$  is a counter cation represented by the following general formula (A):

General formula (A)

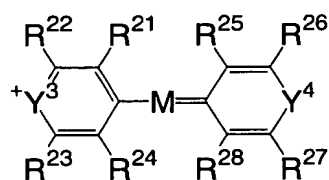


wherein in the general formula (A), R<sup>1</sup> and R<sup>2</sup> each independently represents an alkyl group having from 1 to 12 carbon atoms, which may have a substituent selected from an alkoxy group, an aryl group, an amide group, an alkoxycarbonyl group, a hydroxyl group, a sulfo group, and a carboxyl

group; Y<sup>1</sup> and Y<sup>2</sup> each independently represents an oxygen atom, a sulfur atom, a selenium atom, a dialkylmethylene group, or -CH=CH-; Ar<sup>1</sup> and Ar<sup>2</sup> each independently represents an aromatic hydrocarbon group, which may have a substituent selected from an alkyl group, an alkoxy group, a halogen atom, and an alkoxycarbonyl group, and may fuse an aromatic ring together with Y<sup>1</sup> or Y<sup>2</sup> and two carbon atoms adjacent thereto; and Q represents an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, a dialkylamino group, a diarylamino group, a halogen atom, an alkyl group, an aralkyl group, a cycloalkyl group, an aryl group, an oxy group, or an iminium salt group.

3. The image forming material according to claim 1, wherein in the general formula (1), the counter cation represented by M<sup>+</sup> is a counter cation represented by the following general formula (C):

General formula (C)

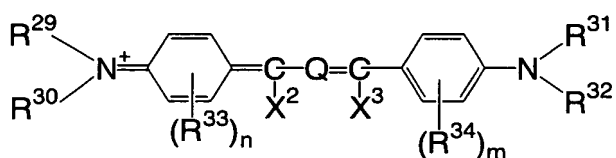


wherein in the general formula (C), Y<sup>3</sup> and Y<sup>4</sup> each independently represents an oxygen atom, a sulfur atom, a selenium atom, or a tellurium atom; M represents a methine chain having at least five or more conjugated carbon atoms; and R<sup>21</sup> to R<sup>24</sup> and R<sup>25</sup> to R<sup>28</sup> each independently represents a

hydrogen atom, a halogen atom, a cyano group, an alkyl group, an aryl group, an alkenyl group, an alkynyl group, a carbonyl group, a thio group, a sulfonyl group, a sulfinyl group, an oxy group, or an amino group.

4. The image forming material according to claim 1, wherein in the general formula (1), the counter cation represented by  $M^+$  is a counter cation represented by the following general formula (D):

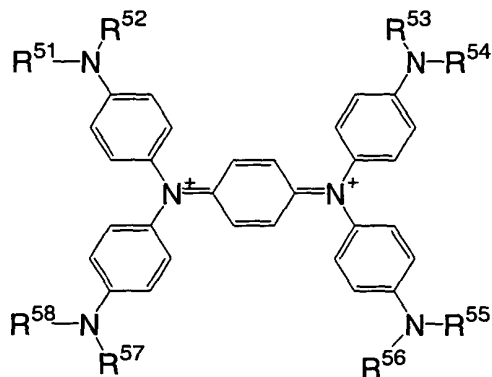
General formula (D)



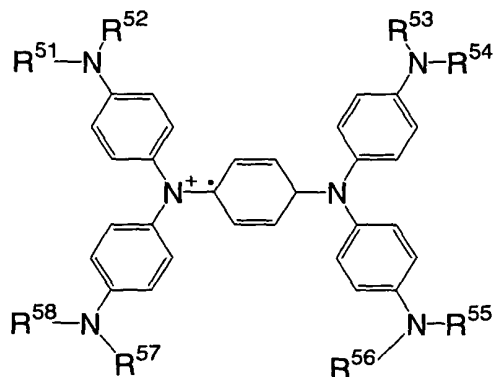
wherein in the general formula (D),  $R^{29}$  to  $R^{32}$  each independently represents a hydrogen atom, an alkyl group, or an aryl group;  $R^{33}$  and  $R^{34}$  each independently represents an alkyl group, a substituted oxy group, or a halogen atom;  $n$  and  $m$  each independently represents an integer from 0 to 4;  $R^{29}$  and  $R^{30}$ , or  $R^{31}$  and  $R^{32}$  may bond to form a ring; at least one of  $R^{29}$  and  $R^{30}$  may bond with  $R^{33}$  to form a ring; at least one of  $R^{31}$  and  $R^{32}$  may bond with  $R^{34}$  to form a ring; in the case when a plural number of  $R^{33}$  or  $R^{34}$  are present, the plurality of  $R^{33}$  or the plurality of  $R^{34}$  may bond with each other to form a ring;  $X^2$  and  $X^3$  each independently represents a hydrogen atom, an alkyl group, or an aryl group; and  $Q$  represents an optionally substituted trimethine group or pentamethine group and may form a ring structure together with a divalent organic group.

5. The image forming material according to claim 1, wherein in the general formula (1), the counter cation represented by  $M^+$  is a counter cation represented by the following general formula (F-1) or (F-2):

General formula (F-1)



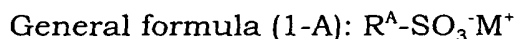
General formula (F-2)



wherein in the general formula (F-1) and (F-2),  $R^{51}$  to  $R^{58}$  each independently represents a hydrogen atom, an optionally substituted alkyl group, or an optionally substituted aryl group.

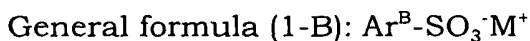
6. The image forming material according to claim 1, wherein in the general formula (1), the anion containing at least one substituent having an alkali-dissociating proton represented by  $X^-$  is selected from the group consisting of a phenolic hydroxyl group, a carboxyl group, a mercapto group, a phosphonic acid group, a phosphoric acid group, a sulfonamide group, a substituted sulfonamide based group, a sulfonic acid group, a sulfinic acid group,  $-C(CF_3)_2OH$ , and  $-COCH_2COCF_3$ .

7. The image forming material according to claim 1, wherein the compound having a structure represented by general formula (1) is an onium salt represented by the following general formula (1-A):



wherein in the general formula (1-A),  $R^A$  represents a substituent containing at least one substituent having an alkali-dissociating proton; the substituent having an alkali-dissociating proton is synonymous with the substituent having an alkali-dissociating proton in the general formula (1); and  $M^+$  is synonymous with  $M^+$  in the general formula (1).

8. The image forming material according to claim 1, wherein the compound having a structure represented by general formula (1) is an onium salt represented by the following general formula (1-B):



wherein in the general formula (1-B),  $Ar^B$  represents an aryl group containing at least one substituent having an alkali-dissociating proton; the substituent

having an alkali-dissociating proton is synonymous with the substituent having an alkali-dissociating proton in the general formula (1); and  $M^+$  is synonymous with  $M^+$  in the general formula (1).

9. The image forming material according to claim 1, wherein the image forming layer further contains (C) a light-heat converting agent.

10. The image forming material according to claim 1, wherein the image forming material is a planographic printing plate precursor.

11. An image forming material comprising a support and an image forming layer which is laminated on the support and contains at least (A) a water-insoluble and alkali-soluble high-molecular compound, (C) a light-heat converting agent, and (D) an onium salt represented by the following general formula (2):

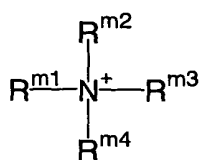
General formula (2):  $X^-M_1^+$

wherein in the general formula (2),  $X^-$  represents an anion containing at least one substituent having an alkali-dissociating proton; and  $M_1^+$  represents a counter cation selected from solfonium, iodonium, ammonium, phosphonium, and oxonium.

12. The image forming material according to claim 11, wherein in the general formula (2), the counter cation represented by  $M_1^+$  is quaternary ammonium.

13. The image forming material according to claim 12, wherein the quaternary ammonium has a structure represented by the following general formula (M):

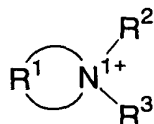
General formula (M)



Wherein in the general formula (M),  $R^{m1}$  to  $R^{m4}$  each independently represents a substituent having one or more carbon atoms and may bond with each other to form a ring structure.

14. The image forming material according to claim 12, wherein the quaternary ammonium has a structure represented by the following general formula (M-1):

General formula (M-1)

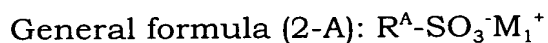


wherein in the general formula (M-1),  $R^1$  represents a residue forming a ring

structure containing an N<sup>1</sup> atom; R<sup>2</sup> and R<sup>3</sup> each independently represents an organic group and may bond with each other to form a ring structure; and at least one of R<sup>2</sup> and R<sup>3</sup> may be bonded to R<sup>1</sup> to form a ring structure.

15. The image forming material according to claim 11, wherein in the general formula (2), the anion containing at least one substituent having an alkali-dissociating proton and represented by X<sup>-</sup> is selected from the group consisting of a phenolic hydroxyl group, a carboxyl group, a mercapto group, a phosphonic acid group, a phosphoric acid group, a sulfonamide group, a substituted sulfonamide based group, a sulfonic acid group, a sulfinic acid group, -C(CF<sub>3</sub>)<sub>2</sub>OH, and -COCH<sub>2</sub>COCF<sub>3</sub>.

16. The image forming material according to claim 11, wherein the onium salt represented by the general formula (2) is an onium salt represented by the following general formula (2-A):

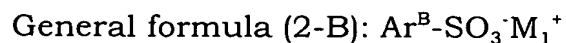


wherein in the general formula (2-A), R<sup>A</sup> represents a substituent containing at least one substituent having an alkali-dissociating proton; the substituent having an alkali-dissociating proton is synonymous with the substituent having an alkali-dissociating proton in the general formula (2); and M<sub>1</sub><sup>+</sup> is synonymous with M<sub>1</sub><sup>+</sup> in the general formula (2).

17. The image forming material according to claim 11, wherein the onium salt represented by general formula (2) is an onium salt represented by the



following general formula (2-B):



wherein in the general formula (2-B),  $\text{Ar}^{\text{B}}$  represents an aryl group containing at least one substituent having an alkali-dissociating proton; the substituent having an alkali-dissociating proton is synonymous with the substituent having an alkali-dissociating proton in the general formula (2); and  $\text{M}_1^+$  is synonymous with  $\text{M}_1^+$  in the general formula (2).

18. The image forming material according to claim 11, wherein the onium salt represented by the general formula (2) does not exhibit substantially absorption between 500 nm and 600 nm.

19. The image forming material according to claim 11, wherein the image forming material is a planographic printing plate precursor.